

CLAIMS

1. An organic EL display device comprising a plurality of display elements formed on a substrate;

5 wherein each of the display elements includes a first electrode segment formed on the substrate, an organic segment formed on the first electrode segment and having a light emitting element for generating light upon application of an electric field, and a second electrode
10 segment formed on the organic element, and

 wherein the second electrode segment includes an opening for allowing passage of the light generated in the organic element.

15 2. The organic EL display device according to Claim 1, wherein the substrate and the first electrode segment are transparent.

3. The organic EL display device according to Claim 1,
20 wherein at least part of the opening is closed by a transparent closure layer.

4. The organic EL display device according to Claim 3,
wherein the closure layer is made of a conductor held in
25 conduction with the second electrode element.

5. The organic EL display device according to Claim 4, wherein the closure layer comprises a metal layer having a thickness of 50 nm or less.

5 6. The organic EL display device according to Claim 5, wherein the closure layer is made of gold or aluminum.

7. The organic EL display device according to Claim 1, which comprises a plurality of first strip electrodes
10 extending in a first direction and each including a plurality of said first electrode segments arranged in a row extending in the first direction, and a plurality of second strip electrodes extending in a second direction transverse to the first direction and each including a
15 plurality of said second electrode segments arranged in a row extending in the second direction,

wherein the opening is provided in a respective one of the second electrodes at a position crossing a respective one of the first electrodes.

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8. The organic EL display device according to Claim 7, wherein the opening is generally square or rectangular.

9. The organic EL display device according to Claim 7,
25 wherein a maximum dimension of the opening in the second direction is smaller than a dimension of a respective first electrode in the second direction.

10. The organic EL display device according to Claim 1,
further comprising:

a cover for covering the plurality of display elements;

an anti-reflective film formed between the plurality
5 of display elements and the cover for preventing light
emitted from each of the display elements from being
reflected on an inner surface of the cover.

11. The organic EL display device according to Claim 1,
10 wherein the substrate is made of silicon.

12. An organic EL display device comprising a plurality
of display elements formed on a substrate;

wherein each of the display elements includes a light
15 emitting element containing an organic compound for
generating light upon application of an electric field,
and a first and a second electrode segments for applying
the electric field to the light emitting element;

wherein one of the first and second electrode segments
20 includes a part located adjacent to the other electrode
segment in a plane parallel to the substrate; and

wherein the light emitting element covers both the
first and second electrode segments.

25 13. The organic EL display device according to Claim 12,
wherein at least one of the first and second electrode
segments is transparent.

14. The organic EL display device according to Claim 12, wherein at least one of the first and second electrode segments is formed over the other electrode segment via an insulating film.

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15. The organic EL display device according to Claim 12, wherein at least one of the first and second electrode segments is made of a material having a resistance of less than $10^{-4} \Omega \cdot \text{cm}$.

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16. The organic EL display device according to Claim 12, which includes a plurality of first strip electrodes each having a plurality of first electrode elements arranged in a row, a plurality of second strip electrodes formed over the first strip electrodes in crossing relationship thereto via an insulating layer and each having a plurality of second electrode elements arranged in a row.

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17. The organic EL display device according to Claim 16, wherein each of the first strip electrodes serves as an anode while each of the second strip electrodes serves as a cathode, and

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wherein the display device further comprises an anode-side functional element interposed between the first electrode segment and the light emitting element for providing at least one of a hole transporting function and a hole injecting function, and a cathode-side functional

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element interposed between the second electrode segment and the light emitting element for providing at least one of an electron transporting function and an electron injecting function.

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18. The organic EL display device according to Claim 17, wherein the anode-side functional element and the cathode-side functional element in each display element are located adjacent to each other in a plane parallel to
10 the substrate but are separated from each other by an insulating separator.

19. The organic EL display device according to Claim 17, wherein at least one of the anode-side functional element
15 and the cathode-side functional element contains an additive for enhancing electroconductivity.

20. The organic EL display device according to Claim 12, further comprising:

20 a cover for covering the plurality of display elements;
and

an anti-reflective film formed between the plurality of display elements and the cover for preventing light emitted from each of the display elements from being
25 reflected on an inner surface of the cover.